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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,624	02/25/2002	Lennart Ahlgren	003300-894	8080

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EXAMINER

HOPKINS, ROBERT A

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/030,624

Applicant(s)

AHLGREN ET AL.

Examiner

Robert A Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 4-9, 11-15 and 17 is/are allowed.
- 6) ☐ Claim(s) 1-3, 10, 16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The title should be directed towards a particle separator with radially separated sets of circumferentially spaced mechanical separators.

Claim Rejections - 35 USC § 112

Claims 1-3, 10, 16, and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 lines 9-10 recite "which means that the gas is allowed to flow". Examiner notes that the above recited limitations do not positively recite a method step, and therefore the scope of the claim is unclear. Examiner suggests substituting – wherein the gas flows—for "which means that the gas is allowed to flow" in order to more positively state a method step. Claims 2 and 3 depend on claim 1 and hence are also rejected.

Claim 2 line 4 recites "the reversed r-direction". There is a lack of antecedent basis for "the reversed r-direction" in previous claim limitations. Examiner suggests defining a step wherein the gas flows in a direction reverse from the r-direction.

Claim 2 line 9 recites "and mechanically separating the particles from the gas as above". Examiner is unsure as to what separating step is referred to by "as above". Correction is requested.

Claim 3 line 3 and claim 18 line 3 recites "and wherein after all separation steps". There is a lack of antecedent basis for "all separation steps" in previous claim limitations. Examiner notes that neither claim 1 nor claim 3 define a series of separation steps. Correction is requested.

Claims 10 line 2, 19 line 2, and 20 line 2 recite "generally cylindrical shape, preferably with the separator elements being arranged essentially symmetrically". The term "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Examiner suggests substituting –wherein — for "preferably with" , and

substituting --are-- for "being", to more positively define the scope of the claim.

Correction is requested.

Claim 16 recites "located inside a reactor, preferably at the upper portion thereof". The term "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 16 recites "wherein said centre axis is in parallel with the axis of the reactor, preferably co-axially". The term "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Ruottu et al(6045688).

Ruottu et al teaches a method for separating entrained particles from a gas in a fluidized bed reactor system which comprises a separation region defined by a

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cylindrical coordinate system, the method comprising leading the gas in the z direction(annular riser 50 in figure 2), diverting the gas to flow substantially in the r-direction(vanes 51), while keeping the gas distributed in $r\phi$ planes, wherein the gas flows from substantially the whole circumference of the separation region in the $r\phi$ planes, and mechanically separating the particles from the gas while the gas is flowing substantially in the r direction. Ruottu et al further teaches wherein in the cylindrical coordinate system the gas is initially directed from a larger r-value towards a smaller r-value for the first separation step, and wherein after all separation steps have been performed the gas having been directed towards a smaller r-value in the last separation step is led away in the z-direction(nozzle 45).

Allowable Subject Matter

Claims 4-9,11-15,17 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 recites "causing the gas to flow in stacked multileveled flow with consecutive particle separation levels X_n ". Rhottu et al discloses mechanical separation on a single level". It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a step of causing the gas to flow in stacked multileveled flow with consecutive particle separation levels X_n because Rhottu et al does not suggest such a modification. Claim 5 depends on claim 4 and hence is also allowed.

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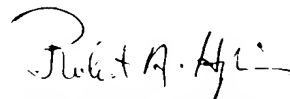
Claims 6 and 8 recite "a set of non-centrifugal mechanical separator elements disposed in the flow path of the gas". Rhottu et al discloses a single centrifugal mechanical separator element disposed in the flow path of the gas. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a set of non-centrifugal mechanical separator elements disposed in the flow path of the gas because Rhottu et al does not suggest such a modification. Claims 7, 11-15, and 17 depend on claim 6 and hence are also allowed. Claim 9 depends on claim 8 and hence is also allowed.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A Hopkins whose telephone number is 703-308-3913. The examiner can normally be reached on Monday-Friday 9:00am-3:00pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9572 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Robert A Hopkins
Primary Examiner
Art Unit 1724

rah
March 17, 2003